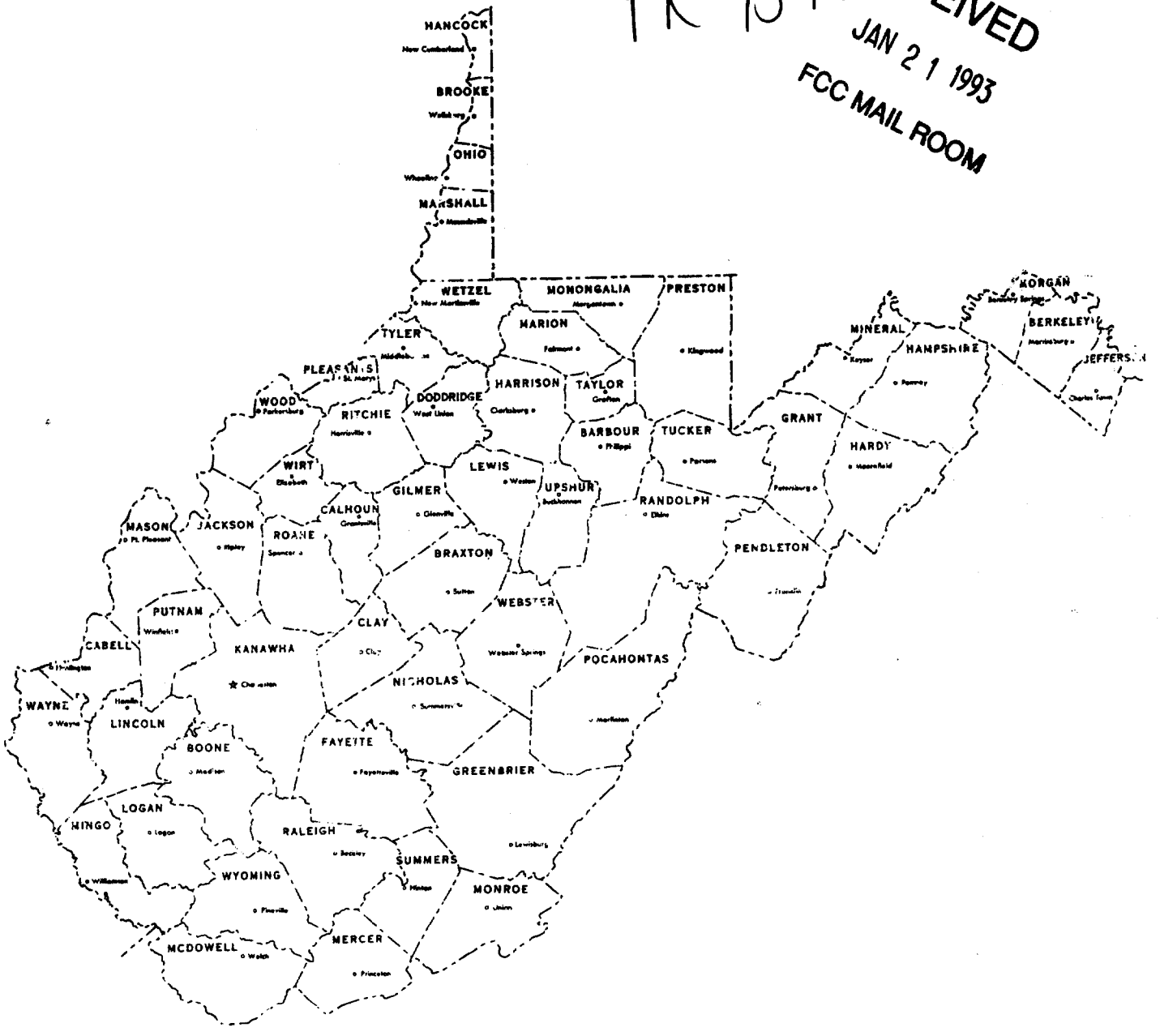
PUBLIC SAFETY RADIO COMMUNICATIONS PLAN

REGION 44



THE STATE OF WEST VIRGINIA

LEGAL NOTICE
INTENT TO FILE
PUBLIC SAFETY
COMMUNICATIONS PLAN

The Region 44, State of West Virginia, Planning Committee for the use of newly allocated 800 MHz Radio Frequency Spectrum has completed the written plan and hereby intends to file this plan with the Federal Communications Commission on or about January 15, 1993.

This plan was developed under the guidelines as set forth by the Federal Communications Commission in Docket 87-112 adopted in December 1987.

This final draft of the plan was approved during a meeting held in Charleston West Virginia on December 9, 1992 in the offices of the West Virginia Office of Emergency Services.

Frederick B. Smart

Frederick B. Smart, Chairperson
Region 44 - State of West Virginia

REGION 44

THE STATE OF WEST VIRGINIA

ITEMS TO CHECK PERTAINING TO THE PLAN

1) Cover page - identifying the region

2) Chairperson - name, address, phone number and signature See page **30.**

3) Committee members - name, organizational affiliation, address. phone numbers. See page **30**

4) Summary of major elements of the plan. See Page **1**

5) General description of how spectrum is allotted among users. See page **14**

6) Explanation of how the requirements of all eligibles are considered and met. See page **2.**

7) Explanation of how eligibles are prioritized in areas where not all eligibles may receive licenses. See page **29**

8) Explanation of how the plan has been coordinated with adjacent regions. See Page **13.**

9) Description of how the plan puts spectrum to best possible use by

    I. Requiring system design with minimum coverage areas (see page **9**).

    II. Assigning frequencies so that maximum frequency reuse and offset channel use may be made (see page **14**)

III. Making use of trunking (see page **18**)

IV. Requiring small entities with minimal requirements to join together on a single system where possible (see page **20**)

10) Explanation of how interoperability channels are managed (see page **4**)

11) "Slow Growth" language. See page **21**

12) Does the plan refer to **Give-Back** frequencies? If yes, page number **12.**

13) Use the APCO sorting program. See page **14**

14) Appeal Process. See page **29**

15) Does the plan provide for the regional mutual aid channels, in addition to the five (5) common channels. If so, are there guards bands for these channels. **No**

16) Describe the formation of the committee;

I. Advertising-copy should be attached to legal notice, letters to the industry, etc. **Appendix A**

II. Who could vote? and what procedure was used after first meeting? see page **2**

III. How was the final plan adopted. Was it by members attending a meeting or mail ballot? see page **2 & 3.**

HARRISON COUNTY BUREAU OF EMERGENCY SERVICES
ROUTE 3, BOX 201 • CLARKSBURG, WV 26301 • (304) 623-6559 • FAX (304) 623-6558

January 13, 1993

Ms. Donna Searcy
Secretary
Federal Communications Commission
Washington DC 20554

Dear Ms. Searcy:

As Chairperson of the Region 44 National Public Safety Planning Advisory Committee (NPSPAC), I am proud to present for your consideration our committee's Frequency Utilization Plan for the State of West Virginia. Formulated in accordance with FCC Dockets 87-112 and 87-359.

Beginning on August 11, 1992, the Region 44 co-conveners issued a Public Notice,in several newspapers, that an initial Region 44 Public Safety Planning meeting would be held. The published date of this meeting was October 28, 1992 at 10:00 am in Flatwoods WV (see appendix A). In addition, letters of notification were sent to federal and state agencies and others (see appendix B). This initial regional planning meeting officially established the Region 44 Planning Committee and elected John Robinson as Chairperson by a vote of those present (see appendix D). Participants at this meeting represented Public Safety Radio Service, Special Emergency Radio Service and the Vendor Community. Please note that the vendors participation was encouraged, however, they were not allowed to vote.

Upon the resignation of John Robinson (see appendix G) and my election to Chairperson during our final meeting (see appendix F) of Region 44, I compiled all of the inputs from the Planning Committee members and developed the final draft.

This final document is outstanding proof that a diverse group of individuals and organizations ranging from Law Enforcement, Fire/Emergency Service, Federal Agencies, State Agencies and others can work together effectively for the good of the communities and citizens they serve.

Sincerely,

Frederick B. Smart

Frederick B. Smart, Chairperson
Region 44

Harrison County Bureau of Emergency Services
Route 3 Box 201
Clarksburg WV 26301
304-623-6559 V
304-623-6558 F

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1.0 SCOPE

1.1 Introduction

In December of 1983, the United States Congress directed the Federal Communications Commission (FCC) to establish a plan to ensure that the communications needs of state and local public safety authorities would be met. By their regular means of initiation, the FCC began the process of developing such a plan. Through their efforts, and the efforts of the National Public Safety Planning Advisory Committee (NPSPAC) the plan was begun.

The National Public Safety Planning Advisory Committee provided an opportunity for the public safety community and other interested members of the public to participate in an overall spectrum management approach by recommending policy guidelines, technical standards, and procedures to satisfy public safety needs for the foreseeable future. After consideration of NPSPAC's Final Report and comments filed in Docket No. 87-112, a Report and Order was released by the FCC in December 1987, which established a structure for the National Plan that consists of guidelines for the development of regional plans.

The National Plan provides guidelines for the development of regional plans. The particulars of this plan are found in FCC 87-359, which contains the required steps and contents for regional plan development. It is on this document that this plan is developed.

1.2 Purpose

Public safety communications has, for many years, been inadequate throughout the United States. This is as true for West Virginia as it is for any other state. Many, if not all, public safety radio users are constantly bombarded with outside interference, noise, and over crowding. It is with these problems in mind that this plan was developed.

This regional plan was developed with the objective of assuring all levels of public safety/public service agencies that radio communications in the near and distant future will not suffer from the problems of the past. The allocation of frequencies was done in as equitable a way as possible. The goal was to supply a pool of frequencies for each county and a pool for state agency use with

1.2 Purpose (Cont'd)

adequate reserve allocations for future needs in all areas, and a method to appeal initial allocations based on need.

The National Plan, as developed by NPSPAC, was followed very closely in all considerations for frequency allocation, re-use, turn back, regional interoperability, spectrum requirements and adjacent region operations. This plan should provide the flexibility to accommodate the growth and changes which are bound to occur in public safety and public service communications operations long into the future.

2.0 AUTHORITY

2.1 Regional Planning Committee

The development of the Public-Safety Radio Communications Plan for Region 44, the State of West Virginia, has followed the requirements of the FCC's Report and Order as issued in the matter of General Docket 87-112.

In accordance with the FCC's Report and Order 87-112, the Associated Public-Safety Communications Officers Inc. (APCO) recommended to the Commission the appointment of a "Convener" for West Virginia Region 44 The Convener served as the coordinator for the assembly and formation of the planning committee.

Participants in the formation of the Regional Planning Committee represent interested parties from both the Public Safety and Special Emergency Radio Services. A total of **23** individuals have participated in the development process. The list herein contains the names, organizational affiliations, mailing addresses and phone numbers of all participants in the Regional Planning Committee. SEE APPENDIX A

The committee was selected by attendance at the planning meetings. Each member of the Committee representing an eligible licensee under the Public Safety Radio Services and the Special Emergency Radio Services was entitled to one vote in all Committee matters. Except as may be provided elsewhere in the Plan, the majority of those present at a scheduled meeting constituted a majority for all business. Only the final approval of the plan, prior to submission to the FCC, required a vote. In this case the vote was conducted by written ballot by those in attendance and proxy

2.1 Regional Planning Committee (Cont'd)

by those interested but unable to attend. This way, the finished plan was reviewed and accepted by the widest, within reason, group of public safety/public service users. SEE APPENDIX A

2.2 Planning Committee Formation

The process of forming the Planning Committee was conducted in the following steps:

1. Personal interviews were held with the representatives of major state agency radio users.

2. Presentations concerning the requirements for a regional planning committee were presented and discussed at the state organizational meeting. At the presentation there was an opportunity for persons to place themselves and/or their agency on the mailing list.

3. Letters of announcement were mailed to each major state agency radio users, those placed on the mailing list, as well as to state organizations composed of local government level public safety/public service users. SEE APPENDIX B

4. A public notice was placed in several newspapers within the state for the first planning committee meeting. This first meeting was held at the Days Inn, Flatwoods, West Virginia.

5. Committee membership was left open to any person or agency which may not have been notified or decided to join the committee later.

6. Vendors participation was encouraged , but vendors were not allowed a vote.

2.3 National Interrelationships

The Regional Plan is in conformity with the National Plan. If there is a conflict between the two plans, the National Plan will govern. It is expected that Regional Plans for other areas of the country may differ from this plan due to the broad differences in circumstance, geography, and population density. By officially sanctioning this plan the Federal Communications Commission agrees to its conformity to the National Plan. Nothing in the Plan is to interfere

2.3 National Interrelationships (Cont'd)

with the proper functions and duties of the organizations appointed by the FCC for frequency coordination in the Private Land Mobile Radio Services, but rather it provides procedures that are the consensus of the Public Safety Radio Services and Special Emergency Radio Service user agencies in this Region. If there is a perceived conflict then the judgment of the FCC will prevail.

2.4 Federal Interoperability

Interoperability between the Federal, State and Local Governments during both daily and disaster operations will primarily take place on the five common channels identified in the National Plan. Additionally, through the use of S-160 or equivalent agreements, a licensee may permit Federal use of a non-Federal communications system. Such use, on other than the five identified common channels, is to be in full compliance with FCC requirements for government use of non-government frequencies (Title 47 CFR, sec 2.103). It is permissible for a non-Federal government licensee to increase channel requirements to account for 2-10 percent increase in mobile units, dependent on the amount of Federal Government Agencies involvement in its area, provided that written documentation from Federal agencies supports at least that number of increased units.

2.5 Regional Review Committee

Upon approval of this Plan by the Federal Communications Commission, the WV APCO frequency advisor will implement the plan should a scarcity of spectrum be determined and a Region Review Committee will be established for the review of applications which do not fall within the stated guidelines provided for in this plan, or for the settlement of disputes concerning this plan and/or its application.

This committee shall consist of the Local APCO Frequency Advisor for this region, a state agency representative, one representative from the Police, Fire and EMS services, and a minimum representation from other eligibles is also welcome. Membership on this committee will be solicited on an annual basis. Since this committee will probably not have regular business, it will be up to the Local APCO Frequency Advisor to notify the committee of problems, conflicts, or when it becomes apparent that spectrum demands will out pace available spectrum. Each member of the

2.5 Regional Review Committee (Cont'd)

committee shall be furnished a copy of this plan upon their appointment or election to the committee.

Plan updates shall be accomplished by this committee. All changes or updates to the plan shall be first agreed upon by this committee and then submitted to the FCC for their review and consideration. When approved all changes shall be added to the plan with the appropriate documentation of approval.

This committee shall meet at least once annually to review the implementation of the plan. This review shall consist of examination of any and all license activity.

3.0 SPECTRUM UTILIZATION

This portion of the Plan provides a basis for proper spectrum utilization. Its purpose is to guide the Local APCO Frequency Advisor and/or the Regional Review Committee in their task of evaluating the implementation of this plan within this Region.

3.1 Region Defined

Region 44 is the State of West Virginia. This region is the result of definition by the Federal Communications Commission as a result of recommendations made in the National Public Safety Planning Advisory Committee (NPSPAC) plan as submitted and approved and contained in Docket 87-112. For purposes of this plan the State of West Virginia shall be defined as all the lands and waters contained within the boundaries of the State of West Virginia.

3.2 Region Profile (Demographic Information)

The purpose of this section is to provide the basis for the assignment of frequencies, and their re-use. Since the frequency allocation formula used is based on population within a county, it is necessary to provide this information within this plan. Below is the data used in the determination of frequency allocations.

3.2.1 State Of West Virginia Population And Expected Growth Percentage.

The population of the state as reported in the 1990 census is listed

3.2.1 State Of West Virginia Population And Expected Growth Percentage. (Cont'd)

below by county. A population growth of five percent (5%) is projected as indicated.

COUNTY	POPULATION 1990	POPULATION 2000 (PROJECTED)
Barbour	15,699	16,483
Berkley	59,253	62,215
Boone	25,870	27,163
Braxton	12,998	13,648
Brooke	26,992	28,342
Cabell	96,827	101,668
Calhoun	7,885	8,279
Clay	9,983	10,428
Doddridge	6,994	7,344
Fayette	47,952	50,350
Gilmer	7,669	8,052
Grant	10,428	10,949
Greenbrier	34,693	36,428
Hampshire	16,498	17,333
Hancock	35,233	36,995
Hardy	10,977	11,526
Harrison	69,371	72,840
Jackson	25,938	27,235
Jefferson	35,926	37,722
Kanawha	207,619	218,000
Lewis	17,223	18,084
Lincoln	21,382	22,451
Logan	43,032	45,184
McDowell	35,233	36,995
Marion	57,249	60,112
Marshall	37,356	39,224
Mason	25,178	26,437
Mercer	64,980	68,229
Mineral	26,697	28,032
Mingo	33,739	35,426
Monongalia	75,509	79,284
Monroe	12,406	13,026
Morgan	12,128	12,734
Nicholas	26,775	28,114
Ohio	50,871	53,415
Pendleton	8,054	8,457

COUNTY	POPULATION 1990	POPULATION 2000 (PROJECTED)
Pleasants	7,546	7,923
Pocahontas	9,008	9,459
Preston	29,037	30,489
Putnam	42,835	44,977
Raleigh	76,819	80,660
Randolph	27,803	29,193
Ritchie	10,233	10,745
Roane	15,120	15,876
Summers	14,204	14,914
Taylor	15,144	15,901
Tucker	7,728	8,114
Tyler	9,796	10,286
Upshur	22,867	24,010
Wayne	41,636	43,718
Webster	10,729	11,265
Wetzel	19,258	20,221
Wirt	5,192	5,452
Wood	86,915	91,261
Wyoming	28,990	30,440

3.2.2 Geographical Description

There are 55 counties in the state with a total land mass of 24,282 square miles. The largest county is Randolph, with a total of 1046 square miles.

As is shown above, the population of the state is 1,793,477 and is UNEVENLY distributed across the land area contained in the state. This presents some problems in area coverage for radio systems in that the entire land area of any given jurisdiction must be covered. The population per square mile is somewhat sparse which generally indicates that the concentration of radio users for public safety activities is also sparse. All of these items were taken under consideration in the allocation plan.

3.3 Usage Guidelines

All systems operating within the Region having five or more channels will be required to be trunked. Those systems having four or less channels may be conventional or trunked.

The FCC, in its Report and Order states, "Exceptions will be permitted only when a substantial showing is made that alternative

3.3 Usage Guidelines (continued)

technology would be at least as efficient as trunking or that trunking would not meet operational requirements. Exceptions will not be granted routinely, however, and strong evidence showing why trunking is unacceptable must be presented in support of any

3.3 Usage Guidelines (continued)

the next level of communications the term city or town is used to define the level below county-wide. City or town communications for public safety and public services purposes must provide only the communications needed within its boundaries. However, if the total number of radios in service does not reach minimum loading criteria for a trunked system, that city or town must consider utilizing the next higher system level if 800 MHz trunked radio is available in the area. As those higher level systems reach capacity, the smaller system communicators in public safety and public service must then consider uniting their communications efforts to formulate one large system or forfeit use of the limited 800 MHz spectrum.

Where smaller conventional 800 MHz needs are requested, those frequencies to be utilized must not interfere with the region's trunked systems. The 800 MHz trunked radio system is to be considered the higher technology at this time and in greater compliance with FCC guidelines. The amount of interference that can be tolerated depends on the service affected. Personal life and property protection shall receive the highest priority and disruptive

3.4.2 System Coverage Limitations (Cont'd)

rule shall be those applicants wishing to offer service or system use to areas outside of their jurisdictional boundaries. In these

Environment Type:(Cont'd)

The classifications are:
1-URBAN; Which is built-up city-crowded with large buildings or closely interspersed with houses and thickly-grown trees. This would include the downtown area of a major city.

2-SUBURBAN; Which is a city or highway with scattered trees, houses and buildings. This would include the downtown area of a large city.

3-QUASI-OPEN; Is an area between suburban and open areas. This includes areas outside of city limits that have few buildings and houses.

4-OPEN; Is and area where there are no obstacles such as tall trees or buildings in the propagation path or a plot of land which is cleared of anything for 300 to 400 meters ahead. This would include farm land, open fields, etc.

The Okumura/HATA method is the method resident in the computer packing program to develop this plan. A minimum system shall be permitted without special consideration when it is limited to an HAAT of 100 feet and the transmitter is centrally located within the jurisdiction or jurisdictions participating in a system. In all jurisdictions, regardless of size, a maximum boundary radius of 8 miles shall be allowed provided adequate measures have been taken to assure that interference of existing co-channel and adjacent channel systems will not occur. Preparation of these requirements shall be the responsibility of the applicant. The Federal Communications Commission provides, in part 90.309(a)(4) of the Rules and Regulations, some additional guidance for these calculations.

3.4.4 Annexations And Other Expansions

It is well known that as cities grow, annexations occur. When an expansion of the present city limits of any city currently using an 800 megahertz system within the spectrum as herein specified occurs, it is understood that the existing system may have to be expanded and its range increased. This is a modification and may be permitted. The increased range of the system will have to be determined at the time of modification to assure non-interference with any other existing system. Where interference is likely, the use of alternate methods of expansion, such as satellite systems,

3.4.4 Annexations And Other Expansions (Cont'd)

may be necessary.

Should the annexation or expansion of a city effectively take in all or most of a county, the allocation for that county may be given to the city if required by said city and not in use or planned to be used by the county. Where more spectrum is not available from the initial allocation, the rules for expansion of initial allocation, as contained in this plan, shall apply.

3.4.5 Coverage Area Description

All applicants shall provide with their applications a map showing the jurisdictional boundaries to be covered by the system, and the calculated system coverage. This map shall display the location of the system transmitter(s), including control stations. It is recommended that a U.S. Geological Survey (USGS) Quad topographical map be used for this purpose. If not available, a high quality locally produced map or a highway map may be substituted. Regardless of the type map used, the name of the applicant and the scale of the map shall be displayed on the map.

The following table lists the field strength in dBu/KW versus distance and antenna height for the suburban environment. The adjustment factors for the other environments relative to the suburban environment are:

Urban = Suburban - 9.7 dB,
Quasi-open = Suburban + 9.2 dB,
Open = Suburban + 18.4 dB

3.4.6 Reassignment of Frequencies

All agencies participating in the use of the new 800 megahertz spectrum shall prepare and submit a plan for the abandonment of their currently licensed frequencies in the lower bands. These released frequencies shall be available for reassignment to those agencies not migrating to 800 MHz at this time.

These released frequencies shall be returned to the radio service from which it was assigned. These frequencies shall then be available for reassignment by the assignment / coordination criteria in effect for that particular service by the regular FCC authorized

2.4.6 Development of Emergencies (Cont'd)

[illegible]

3.4.8 Adjacent Region Considerations (Cont'd)

33), Kentucky (Region 17), and Maryland, Northern Virginia, and DC, (Region 20), Virginia (Region 42). As the use of the five Na-

3.5.2 Geographic Area (Cont'd)

cient detail, outline the areas to be defined, determine the coordinates and radius of the circles which define each area, and tabulate the data.

3.5.3 Define The Environment

The environment of each system is defined according to the Okumura/HATA method of classifications.

3.5.4 Transmitter Combining

The computer program is designed to provide a minimum frequency separation between any two channels assigned to the same eligible at the same site. This separation is provided in order to enable more efficient combining of multiple transmitters to a single antenna. These separated blocks of frequencies also have a maximum size. That is, if the eligible has more frequencies than the maximum size of the combining block, then a second compatible block is created, and so on. Each of these parameters is adjustable in the program on a global basis. The default parameters chosen are 0.25 MHz minimum spacing and five channel blocks.

3.5.5 Protection Ratios

There are two interference protection ratios built into the computer program. One is for the co-channel case, the other is for the adjacent channel case. The ratios provide 35 dB Desired/Undesired signal ratio for co-channel assignments, and 15 dB Desired/Undesired ratio for the adjacent channel case. These ratios provide an acceptable probability of interference for Public Safety Services.

3.5.6 Adjacent Region Coordination

The computer program requires a listing of channels to be blocked along the borderline with other regions which have pre-existing plans. If the adjacent region plan was developed using the APCO/ packing program, this information exists in the database. If the adjacent region plan was developed by another method, then the data must be obtained from the adjacent region's plan in order to build the exclusion list.

4.0 COMMUNICATIONS REQUIREMENTS

4.1 Common Channel Implementation

The implementation of the International Common Channels must follow the guidelines as set forth by the Federal Communications Commission by the approval of the National Plan. These five common channels are accessible by all levels of government and shall be used in accordance with the provisions of the National Plan. All mobile and portable equipment must be equipped to operate in the "talk-around mode" when required on the International Channels.

The International calling channel (821/866.0125 MHz) shall be implemented as a full mobile relay. Wide area coverage transmitters will be installed where applicable within a system. Large system users (5 channels or more) of 800 MHz shall be required to monitor this channel at all times. The area of coverage for this channel shall be equal to the area covered by the licensed system. This may or may not require the use of satellite receivers within the area to meet this requirement.

The four International Tactical (ITAC) Channels will be assigned State-wide, for use as needed by all eligible licensees. These channels are to be used in accordance with the National Plan and in compliance with the regulations as set forth by the Federal Communications Commission. These channels require no special licensing, only that the users be eligible for licensing on the other Public Safety 800 MHz channels as specified in section 90.616 (a) of the FCC Rules and Regulations.

4.1.1 Areas of Operation

The common channels shall be available for use throughout the Region. No specific assignments were deemed necessary within the Region.

4.1.2 Operation on The Common Channels

Normally, the five interoperable channels are to be used only for activities requiring inter-communications between agencies not sharing any other compatible communications system. Interoperable channels are not to be used by any level agency for routine, daily operations. In major emergency situations, one or more ITAC channels may be assigned by the primary Public Safety Agency

4.1.2 Operation on The Common Channels (Cont'd)

within that area of operation. The primary Public Safety agency in each county, if not defined elsewhere in the plan, shall be the County Sheriff's Department or Public Safety Department or the lead agency, which may be any agency licensed to operate in this spectrum, or "on-scene" commander. The primary Public Safety agency shall be the city level Public Safety Department in situations which occur within the corporate limits of said city. These primary agencies will assign one or more of the ITAC channels for use according to need during each special situation requiring the use of these channels.

Participants in the interoperable channels include Federal, State, and Local Disaster Management agencies. Police, Fire, and providers of Basic and Advanced Life support services will be the primary using agencies. If radio channels are available, other